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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,727	09/29/2000	Francis X. Canning	CANNING.001A	2872

20995 7590 02/02/2009
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EXAMINER

DAY, HERNG DER

ART UNIT	PAPER NUMBER
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2128

NOTIFICATION DATE	DELIVERY MODE
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02/02/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 09/676,727	Applicant(s) CANNING, FRANCIS X.	
	Examiner HERNG-DER DAY	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22,34 and 40-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22,34 and 40-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/25/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to Applicant's Amendments and Response ("Amendment") to Office Action dated May 29, 2008, filed November 25, 2008.

1-1. Claims 1, 2, 7, and 10 have been amended. Claims 1-22, 34, and 40-55 are pending.

1-2. Claims 1-22, 34, and 40-55 have been examined and rejected.

Information Disclosure Statement

2. The information disclosure statement filed November 25, 2008, fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The Cited documents No. 2-7 fail to comply with 37 CFR 1.98(a)(1), are not prior art, and the prosecution on the merits of each related application is not closed. Therefore, it has been placed in the application file, but the information referred to therein has not been considered as to the merits.

Furthermore, the listing of references in an information disclosure statement *letter* is not a proper information disclosure statement submission. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP

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§ 609.04(a) states, “the list ... must be submitted in a separate paper.” Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22, 34, and 40-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4-1. Claim 1 recites the amended limitation, “using said second system of equations computing a resulting electric field due, at least in part, to said plurality of said basis functions in said first group” at the end of the claim, the limitation, “transforming said system of linear equations to use said composite sources and said composite testers to produce a second system of equations” in lines 24-25 of the claim, the limitation, “each of said composite sources comprising a linear combination of a plurality of said original basis functions” in lines 13-14 of the claim, and the limitation, “a plurality of said basis functions in said first group describes electric fields produced by electric charge” in lines 9-10 of the claim. It is vague and indefinite because it is unclear what the *basis functions* other than said “a plurality of said basis functions in said first group describes electric fields produced by electric charge” as recited in lines 9-10 of the claim, are really referred to in order to compute the composite sources and subsequently to produce the second system of equations and compute the resulting electric field. As described in the specification in lines 10-11 of page 6, “The terms “sources” and “physical sources” are used

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herein to include all types of actual and/or fictitious sources.” Therefore, if the *basis functions* are heterogeneous (i.e., other than describing electric fields but also describing, for example, water, stock price, and/or pixels) it is unclear whether the composite sources are still meaningful for computing the recited resulting electric field. Clarification of the metes and bounds, via clearer claim language, is requested.

4-2. Claim 2 recites the limitation, “each of said basis functions corresponding to an original physical source” in lines 4-5 of the claim and the amended limitation, “using said compressed second portion of said transformed system of equations to compute at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force due, at least in part, to said physical sources” at the end of the claim. It is vague and indefinite because it is unclear what “said physical sources” are really referred to in order to compute at least one of the above recited results. As described in the specification in lines 10-11 of page 6, “The terms “sources” and “physical sources” are used herein to include all types of actual and/or fictitious sources.” Therefore, when “said physical sources” are, for example, economic data or stock prices, it is unclear how to compute the recited at least one of the above results. Furthermore, if the “original physical sources” are heterogeneous (e.g., water, stock price, and pixels) it is unclear whether the computed composite source (i.e., a linear combination of one or more of the original sources as described in lines 3-4 of page 15) is still meaningful for computing the recited at least one of the above results. Clarification of the metes and bounds, via clearer claim language, is requested.

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4-3. Claim 10 recites the amended limitation, “using said second equations to compute at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force due, at least in part, from said more than one basis functions” at the end of the claim. It is vague and indefinite because it is unclear what “said more than one basis functions” are really referred to in order to compute at least one of the above recited results. In other words, if “said more than one basis functions” describe “sources” or “physical sources” such as, economic data or stock prices, it is unclear how to compute the recited at least one of the above results using said second equations. On the other hand, if “said more than one basis functions” describe heterogeneous sources (e.g., water, stock price, and pixels) it is unclear whether the calculated composite source as a linear combination of the more than one basis functions (lines 3-4 of the claim) is still meaningful for computing the recited at least one of the above results. Clarification of the metes and bounds, via clearer claim language, is requested.

4-4. Claims not specifically rejected above are rejected as being dependent on a rejected claim.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-22, 34, and 40-55 are rejected under 35 U.S.C. 101 because the inventions as disclosed in claims are directed to non-statutory subject matter.

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6-1. Claims 1-22, 34, and 40-55 are directed to the manipulation of abstract ideas of data compression, calculating composite sources and testers, and transforming system of equations. This claimed subject matter lacks a practical application of a judicial exception (abstract idea) since it fails to produce a useful, concrete, and tangible result.

As stated in the MPEP 2106 (IV)(C), “Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application. In other words, if the specification discloses a practical application of a section 101 judicial exception, but the claim is broader than the disclosure such that it does not require a practical application, then the claim must be rejected.”, “The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result. *Benson*, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).”, and “Thus, a claim that recites a computer that solely calculates a mathematical formula (see *Benson*) or a computer disk that solely stores a mathematical formula is not directed to the type of subject matter eligible for patent protection.” Also, as stated in the MPEP 2106.02, “If the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Gottschalk v. Benson*, 409 U.S. 63, 71 - 72, 175 USPQ 673, 676 (1972). Thus, a process consisting solely of

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mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.”

Specifically, as described in the specification in lines 10-11 of page 6, “The terms “sources” and “physical sources” are used herein to include all types of actual and/or fictitious sources.” Therefore, the claimed subject matter is directed to the manipulation of abstract ideas including those fictitious sources (e.g., a number, formula, expression, etc.) and/or the effect of those fictitious sources. In other words, the claimed subject matter is so broad such that it does not provide or require a practical application. On the other hand, the claimed subject matter is seeking to patent substantially every application of the idea of compression data using composite sources and/or composite testers.

Furthermore, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter includes transforming a system of linear equations to use the composite sources and/or the composite testers to produce a second system of equations and computing a resulting electric field, at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force, or a disturbance. This produced result from abstract sources remains in the abstract and, thus, fails to achieve the required status of having real world value. In other words, the claimed subject matter is so broad and may consist solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, describing or representing sources or

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physical sources (not with any practical application but an abstract idea including fictitious sources, e.g., a number, formula, expression, etc.) and/or the effect of those sources without producing any tangible result for a practical application, and thus nonstatutory.

Applicant's Arguments

7. Applicant argues the following:

7-1. Response to Rejection of Claims 2-22 and 42-54 Under 35 U.S.C. 112 First Paragraph

(1) "Applicant has amended Claims 2 and 10 replacing these words with "at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force."" (page 11, paragraph 3, Amendment)

7-2. Response to Rejection of Claims 1, 34, 40, and 41 Under 35 U.S.C. 112 Second Paragraph

(2) "Applicant has amended Claim 1 to remove the indefinite references to "said computing system" in lines 31-33 and has removed the reference to "said use" on line 32. Furthermore, Applicant has modified the second to last line of the claim to clarify the "resulting electric field" in the last step of the claim." (page 11, paragraph 4, Amendment)

7-3. Response to Rejection of Claim 7 Under 35 U.S.C. 112 Second Paragraph

(3) "Applicant has amended Claim 7 to clarify the reference to the first and second plurality of directions." (page 11, paragraph 5, Amendment)

7-4. Response to Rejection of Claims 1-22, 34, and 40-55 Under 35 U.S.C. 101

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(4) “even when fictitious sources are used in some step of a method, the Electric Field computed is an actual Electric Field, not a fictitious quantity.” Similarly, “at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force” also refers to some real physical quantity.” (page 12, the last second paragraph, Amendment)

(5) “Applicant asserts that although an abstraction might be used in an intermediate step of producing a practical result, there is a practical result recited in each of these claims. Furthermore, these claims do not preempt all uses of the judicial exception involved, since they do not preempt applications to economic data. They also do not preempt numerous applications to image compression.” (page 12, the last paragraph, Amendment)

Response to Arguments

8. Applicant’s arguments have been fully considered.

8-1. Applicant’s argument (1) is persuasive. The rejections of claims 2-22 and 42-54 under 35 U.S.C. 112, first paragraph, in Office Action dated May 29, 2008, have been withdrawn.

8-2. Applicant’s arguments (2) - (3) are persuasive. The rejections of claims 1, 7, 34, 40, and 41 under 35 U.S.C. 112, second paragraph, in Office Action dated May 29, 2008, have been withdrawn.

8-3. Applicant’s argument (4) and (5) are not persuasive. First, as detailed in paragraphs **4-1** to **4-3** above, the recited “basis functions”, “said physical sources” and “said more than one basis functions” are vague and indefinite because in view of the specification and with the broadest reasonable interpretation, they may describe heterogeneous sources and include all types of

actual and/or fictitious sources. Therefore, how to compute the argued results is unclear. Second, the argued results are not produced by any practical application, as detailed in paragraph 6-1 above. Finally, there is no evidence that all the claims have excluded the possibilities that the recited “physical sources” and/or “basis functions” also represent or describe at least the economic data and/or image data. In other words, the claimed compression steps may eventually be applied to applications to economic data or to image compression. Accordingly, the claimed subject matter is indeed seeking to patent substantially every application of the idea of compression of interaction data using composite sources and/or composite testers.

Conclusion

9. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamini S Shah/
Supervisory Patent Examiner, Art Unit 2128

/Herng-der Day/
Examiner, Art Unit 2128

January 26, 2009